

SEPTEMBER 2009 WEATHER SUMMARY FOR THE CENTRAL CALIFORNIA INTERIOR

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September began with a push of marine air into the San Joaquin Valley, bringing a few degrees cooling to most Valley locations. The Hanford forecast area was between an upper-level trough over the eastern Pacific, and an upper-level ridge centered over the desert southwest. The resulting flow between these systems brought subtropical moisture to the region, and producing a few showers over the high country of the Southern Sierra Nevada in Fresno and Tulare Counties on the 2nd.

The trough moved onshore into the Pacific Northwest on September 5th. This deepened the marine layer, allowing another surge of marine air into the central and southern San Joaquin Valley. The trough moved through central California during the night of the 6th-7th, but a trailing short-wave kept temperatures cool for one more day. The combination of cool marine air, light winds and clear skies allowed lows in the coldest San Joaquin Valley sites to dip into the lower 50s during the night of September 7th-8th.

An upper-level ridge began building into the state behind the exiting trough. The ridge lingered over the region for the next several days, with temperatures warming to several degrees above normal. However, an upper-level trough was developing over the eastern Pacific, and reached the coast on the 13th, bringing a sharp change in the weather.

The trough became negatively tilted as the base of the trough lifted northeast into the state. Because of the negative tilt, the jet stream intersected the cold front at an angle, creating areas of enhanced lift. This, in turn, resulted in the development of locally heavy showers over the San Joaquin Valley during the morning of September 14th. One shower was centered over south Hanford, with rainfall amounts ranging from 0.20 inch at the Hanford Municipal Airport to 0.09 inch in northeast Hanford. Another shower dropped 0.17 inch of rain on the Merced Municipal Airport. Between these showers, rain was sparse—Fresno-Yosemite International Airport only recorded 0.01 inch of rain.

Unseasonably cold air moved into the San Joaquin Valley behind the front. The high temperature at Meadows Field, Bakersfield, on the 14th was only 74 degrees. This broke the old record low maximum temperature for the date, which had been 76 degrees, set in 1986.

An upper-level east-Pacific ridge built into California behind the trough. This brought dry and warmer weather to the central California interior. Temperatures in the central and southern San Joaquin Valley on the 18th warmed as much as 9 degrees over the previous day, with several Valley locations seeing 100+ degree highs. Fresno, for example, had a high of 102 degrees on the 18th, 14 degrees above normal.

An upper-level trough moving into the Pacific Northwest on September 19th-20th, but slowed as it approached the coast. As a result, cooling on the 19th was confined to the central San Joaquin Valley and the Southern Sierra Nevada. NAS Lemoore warmed to a high of 104 degrees, and Bakersfield reached 100 degrees, only the third time in September that the high was in triple digits.

The trough only flattened the ridge, which quickly rebounded as the trough moved into the northern Rockies. Even when the ridge had been flattened and briefly pushed westward back into the Pacific, temperatures remained several degrees above normal.

Temperatures warmed to around 10 degrees above normal on September 21st, and triple-digit heat returned to much of the San Joaquin Valley the next day. The upper-level ridge strengthened as a trough developed over the east Pacific, bringing near-record to record warmed to the central and southern San Joaquin Valley. Between September 22nd-27th, Fresno had six consecutive days of 100+ degree high temperatures. Between the 23rd-28th, Fresno set 5 record high minimum temperatures and 1 record high temperature; Bakersfield had 1 record high and 1 record high minimum temperature records.

The upper-level ridge also kept a very dry airmass in place over southern California. RAWS sites in the Kern County Mountains had six consecutive days with extended periods of single-digit relative humidities. The Blue Max RAWS near Walker Pass had 55 consecutive hours with a relative humidity at or below 10 percent, and 176 hours with a relative humidity at or below 15 percent.

The upper-level trough brought an unseasonably cold airmass to central California for the last days of September. High temperatures in the central and southern San Joaquin Valley on the 29th were as much as 23 degrees cooler than the previous day. As the cold front moved through the region on the 29th, winds gusted to 40 mph at Hanford, and to 52 mph at Mojave.

Fresno had its 4th warmest September on record, with an average temperature of 79.7 degrees. Bakersfield had an average temperature of 80.9 degrees, for its 6th warmest September on record. Daily temperature records date back to 1887 for Fresno, and 1889 for Bakersfield.